

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claim 1 (currently amended): A method for producing ~~genetically stabilizing~~ an apomictic plant ~~exhibiting~~ that exhibits increased genetic instability stability for apomixis from an angiospermous apomictic plant that exhibits genetic instability for apomixis comprising doubling the chromosome number of the angiospermous apomictic plant that exhibits genetic instability for apomixis, thereby producing the apomictic plant that exhibits increased genetic stability for apomixis ~~a polyploid derivative line from said plant such that duplicate genes responsible for apomixis are isolated from each other on opposite homeologous genomes such that recombination is suppressed among homeologous genomes within the polyploid derivative line.~~

Claim 2 (currently amended): A method for producing ~~genetically stabilizing~~ an apomictic plant ~~exhibiting~~ that exhibits increased genetic instability stability for apomixis from an

angiospermous apomictic plant that exhibits genetic instability for apomixis comprising:

(a) ~~producing a~~ doubling the chromosome number of the ~~angiospermous apomictic plant that exhibits genetic instability for apomixis and selecting an apomictic segmental allopolyploid polyploid derivative line therefrom from said plant such that duplicate genes responsible for apomixis are isolated from each other by segmental allopolyploidy; and~~

(b) increasing fertility of said apomictic polyploid segmental allopolyploid derivative line exhibiting segmental allopolyploidy by selfing the apomictic segmental allopolyploid derivative line or hybridizing with a similar another plant, recovering seed therefrom, sowing said seed, and obtaining a to obtain sexually-derived apomictic segmental allopolyploid progeny line having increased fertility by selecting sexually-derived apomictic segmental allopolyploid progeny lines that express an increased frequency of unreduced egg fertility or parthenogenesis.

Claims 3-7 (canceled)

Claim 8 (currently amended): ~~A genetically stabilized~~ An apomictic plant that exhibits genetic stability for apomixis

produced according to the method of claim 1, and apomictic progeny obtained from seed thereof.

Claim 9 (currently amended): ~~A genetically stabilized~~  
~~apomictic plant~~ An apomictic segmental allopolyploid derivative  
line having increased fertility produced according to the method of  
claim 2, and apomictic progeny obtained from seed thereof.

Claims 10-14 (canceled)

Claim 15 (currently amended): ~~A method~~ method for producing an  
apomictic plant that exhibits increased genetic stability for  
~~genetically stabilizing~~ apomixis ~~in~~ from an interspecific hybrid  
plant ~~exhibiting that exhibits~~ genetic instability for apomixis  
comprising producing an apomictic allopolyploid derivative line  
from said interspecific hybrid plant and selecting therefrom the  
apomictic plant that exhibits increased genetic stability for  
apomixis ~~such that duplicate genes responsible for apomixis are~~  
~~isolated from each other on opposite homeologous genomes such that~~  
~~recombination is suppressed among homeologous genomes within the~~  
~~allopolyploid derivative line.~~

Claim 16 (currently amended): A method for producing an apomictic plant that exhibits increased genetic stability for ~~genetically stabilizing~~ apomixis ~~in~~ from an interracial or interspecific hybrid plant ~~exhibiting~~ that exhibits genetic instability for apomixis comprising producing ~~a~~ an apomictic segmental allopolyploid derivative line from ~~said the interracial or interspecific hybrid plant and selecting therefrom the apomictic plant that exhibits increased genetic stability for apomixis such that duplicate genes responsible for apomixis are isolated from recombination by segmental allopolyploidy.~~

Claim 17 (currently amended): A method for genetically stabilizing apomixis in an apomictic intraspecific or interspecific hybrid plant or derivative line exhibiting genetic instability for apomixis comprising:

(a) producing a derivative line at an odd-numbered ploidy level such that female meiosis usually aborts resulting in essentially 100% apomictic seed formation; or

(b) crossing said plant with a meiotic mutant of the same species, genus, or family and selecting progeny therefrom wherein ~~breeding said plant such that~~ female meiosis usually aborts resulting in essentially 100% apomictic seed formation.

Claim 18 (canceled)

Claim 19 (new): The method of claim 1 wherein said doubling the chromosome number comprises treating the angiospermous apomictic plant that exhibits genetic instability for apomixis with a spindle inhibitor.

Claim 20 (new): The method of claim 19 wherein the spindle inhibitor comprises colchicine.

Claim 21 (new): The method of claim 1 wherein said doubling the chromosome number comprises culturing the angiospermous apomictic plant that exhibits genetic instability for apomixis in tissue culture.

Claim 22 (new): The method of claim 1 wherein said doubling the chromosome number comprises:

(1) crossing the angiospermous apomictic plant that exhibits genetic instability for apomixis to another plant of the same species, genus, or family and obtaining first progeny therefrom;

(2) counting chromosomes in the first progeny and selecting a partial amphiploid having

all of the chromosomes from the angiospermous apomictic plant that exhibits genetic instability for apomixis or from the other plant of the same species, genus, or family, and

one or more sets of chromosomes from the angiospermous apomictic plant that exhibits genetic instability for apomixis or from the other plant of the same species, genus, or family;

(3) backcrossing the partial amphiploid to the angiospermous apomictic plant that exhibits genetic instability for apomixis or to the other plant of the same species, genus, or family and obtaining second progeny therefrom and selecting an amphiploid having an even ploidy level therefrom.

Claim 23 (new):       The method of claim 22 wherein the partial amphiploid is triploid.

Claim 24 (new):       The method of claim 22 wherein the amphiploid having an even ploidy level is tetraploid.